Seattle-to-Tacoma Sounder Commuter Rail Easements and Improvements (Easements 3 and 4)
SEPA Environmental Checklist

April 2012

Prepared for:

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ENVIRONMENTAL CHECKLIST

A. BACKGROUND

1. Name of the proposed project:

Seattle-to-Tacoma Sounder Commuter Rail Easements and Improvements (Easements 3 and 4)

2. Name of Applicant:

Sound Transit

3. Address and telephone number of applicant and contact person:

Sound Transit contact:
Steve Kennedy, Senior Environmental Planner
401 South Jackson Street
Seattle, WA 98104-2826
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4. Date checklist prepared:

April 2012

5. Agency requesting checklist:

Sound Transit

6. Proposed timing or schedule (including phasing, if applicable):

Construction activity in the area proposed for track improvements are proposed for April 2013 or later and is expected to take approximately two years. A definitive start date for operation of the two additional round-trip commuter rail trains included in the project has not been determined at this time.

7. Plans for future additions, expansion, or further activity related to or connected with this proposal:

BNSF Railway Company (BNSF) plans to perform additional track and signal improvements on the BNSF main line through areas of Tukwila, Kent, and Auburn. These BNSF improvements are unrelated to Sound Transit's purchase of additional easements from BNSF for the operation of two additional commuter trains.

In addition, Sound Transit will be preparing an access study for each of the rail stations in this corridor, which may result in improvements in station areas. Separate environmental review will be prepared for these BNSF and Sound Transit projects, as needed. Sound Transit's Access Study for Sounder service will address concerns and impacts associated with individual stations. The study will determine the best way to improve transit accessibility in keeping with Sound Transit's goal of reducing vehicle miles traveled regionally. Changes to individual stations that affect accessibility, such as adding parking supply or making other improvements, will be evaluated at each of the Sounder stations. If station access improvements are proposed as a result of the Access Study, then separate environmental review and documentation will be prepared as needed. Station access improvements are beyond the scope of the current "Easements 3 and 4" project and this environmental analysis.

8. Environmental information that has been prepared, or will be prepared, directly related to this project:

- NEPA Documented Categorical Exclusion for the proposed project evaluated in this SEPA Checklist has been submitted to the Federal Transit Administration (FTA).
- In 2009, the FTA approved a Documented Categorical Exclusion for Seattle-to-Tacoma Sounder Rail Easements and Improvements for Easements 1 and 2 between Seattle and Tukwila in the BNSF rail corridor. Easements 1 and 2 supported the operation of two additional round-trip commuter trains within the corridor, for a total of eleven round trip commuter trains.
- In 2009, Sound Transit prepared a SEPA Checklist for Seattle-to-Tacoma Sounder Rail Easements and Improvements for Easements 1 and 2 between Seattle and Tukwila in the BNSF rail corridor. Based on the information in the Checklist, Sound Transit issued a SEPA Determination of Non-Significance (DNS) on November 13, 2009.
- A National Environmental Policy Act (NEPA) Environmental Assessment (EA) for the Tacoma-to-Seattle Commuter Rail Project was issued in June 1998. The EA evaluated the impacts associated with nine round-trip commuter trains in the BNSF rail corridor that travels north and south between the King Street Station in Seattle to the Amtrak Station in Tacoma. A Finding of No Significant Impact (FONSI) was issued by the Federal Transit Administration on June 10, 1998. Sound Transit subsequently adopted the EA under SEPA and issued a Mitigated Determination of Non-Significance (MDNS) for the commuter rail project.

9. Applications that are pending for governmental approvals or other proposals directly affecting the property covered by the proposal:

There are no pending governmental approvals or proposals.

10. List of governmental approvals or permits that will be needed for the proposal:

The Sounder Easements 3 and 4 project is located on BNSF property and within the BNSF right-of-way (ROW). This section of the project is along the BNSF interstate main line track. Sound Transit anticipates the following permit needs:

- Section 404/Corps of Engineers required for unavoidable fill in jurisdictional wetlands;
- Section 401 Water Quality Certification/Department of Ecology (DOE) related to the Section 404 permit;
- Certification of Consistency with the Federal Coastal Zone Management (CZM) Act/DOE required for federal environmental regulatory authorizations in a coastal county; and
- NPDES Construction Stormwater Permit/DOE required for more than one acre of proposed soil/earth-disturbing activities.

11. Brief, complete description of the proposal, including the proposed uses and the size of the project and site:

Sound Transit proposes to purchase two easements in the BNSF rail corridor (Easements 3 and 4) from BNSF for the operation of two additional round-trip commuter rail trains in the Seattle-to-Tacoma rail corridor (see Figure 1). As part of Sound Transit's easement agreement with BNSF, track improvements are proposed within the cities of Tukwila, Renton, and Kent under Easement 3, and within the city of Auburn under Easement 4. Each easement would allow for one additional round-trip train between Seattle and Tacoma. The easements have independent utility; the improvements associated with each easement can be constructed and operated independently.

The purpose of this project is to provide additional commuter train capacity needed to accommodate a portion of expected growth in ridership demand. Average daily ridership in the corridor is expected to grow from 8,000 at present to 14,000 to 17,000 in 2034. While most of the increase could be accommodated by existing trains, the easements and track improvements would allow Sound Transit to operate two additional trains in the corridor, providing additional departure times and improving convenience for riders. The track improvements included as a part of Sound Transit's easement agreement with BNSF would also enhance freight, intercity, and commuter rail service by creating additional mainline capacity for all trains using the corridor.

Construction

The improvements associated with Easement 3, between mileposts 10.0 and 15.75, include approximately six miles of improvement projects within the cities of Tukwila,

Renton and Kent and would require acquisition of narrow strips of property located adjacent to the east side of the existing BNSF ROW (Figure 2a). The improvements associated with Easement 4, between mileposts 18.3 and 23.8, include approximately five miles of improvement projects within the city of Auburn, all within the existing BNSF ROW (Figure 2b). Each easement and associated set of improvements could be constructed and operated without constructing the improvements associated with the other easement. Track improvements would be funded by Sound Transit and constructed by BNSF and would include (1) adding additional track; (2) track rehabilitation; (3) new high speed turnouts; (4) updates to existing signals, and construction of new signal facilities including new signals or signal bungalows; and (5) widening two crossings by constructing two new bridges adjacent to existing bridges, one over Longacres Way in Tukwila and one over Mill Creek in Kent.

Construction activities would consist of track removal, relocation, and new construction, including new rail, ties, and ballast. Signal activities would include signal removal, relocation of existing facilities, and installation of new signals and foundations. Other construction activity would include grading, utility relocation, constructing retaining walls along sections of new or rehabilitated track, constructing new access roads, and constructing two new bridges adjacent to existing bridges over Longacres Way and Mill Creek in Kent.

Construction of the proposed improvements would utilize methods and materials similar to those used for regular railroad maintenance activities and require staging and lay down areas. In addition, bridge construction will require the use of cranes and pile driving equipment. Construction equipment and materials would be transported to the corridor by truck. Work crews would access the site by adjacent streets. For details see Figures 2a and 2b and their respective keys.

12. Location of the proposal, including street address, if any, and section, township, and range; legal description; site plan; vicinity map; and topographical map, if reasonably available:

The easement corridor is located within the BNSF ROW between King Street Station in Seattle, King County and Reservation Junction in Tacoma, Pierce County (see Figure 1). The two proposed additional trains would serve existing commuter rail stations in Puyallup, Sumner, Auburn, Kent, and Tukwila. At Reservation Junction, Sound Transit commuter rail trains switch from BNSF tracks to Tacoma Rail tracks leading to the Tacoma Dome Station. The 40-mile rail corridor is located within multiple sections of Township 24 North, Range 4 East; Township 23 North, Range 4 East; Township 22 North, Range 4 East; Township 21 North, Range 4 East; Township 20 North, Range 4 East; Township 20 North, Range 5 East; and Township 20 North, Range 3 East. See Figure 1.

Construction activity will occur from Tukwila to Kent under improvements associated with Easement 3 (T23N, R4E, Sections 24, 25, & 36; T22N, R4E Section 1, 12, & 13);

and in Auburn under improvements associated with Easement 4 (T22N, R4E, Section 36; T21N, R4E, Sections, 1, 12, 13, 24 & 25).

B. ENVIRONMENTAL ELEMENTS

1. Earth

a. General description of the site (underline):

Flat, ~~rolling, hilly, steep slopes, mountainous, other~~

The existing BNSF ROW within the easement corridor and area of track improvements is generally flat, lying within the lowlands of the Duwamish, Green, White and Puyallup River valleys. See Figure 4.

b. What is the steepest slope on the site (approximate percent slope)?

Railroad track embankment slopes range from 0 to 5 percent. Slopes adjacent to the rail corridor can range up to 30 percent.

c. What general types of soils are found on the site (for example clay, sand, gravel, peat, muck)? Specify the classification of agricultural soils and note any prime farmland.

Soils in the vicinity of the area of track improvements mainly consist of structural fill soils and rock related to railway development, overlying poorly drained alluvium soils of the Duwamish, Green, White and Puyallup River valleys.

d. Are there any surface indications or a history of unstable soils in the immediate vicinity? If so, describe.

There are no surface indications or history of unstable soils, or mapped landslide hazards areas, on or in the immediate vicinity of the BNSF rail corridor. Areas along the rail corridor, including the area proposed for track improvements, are located within a liquefaction zone (City of Auburn, 2010; City of Kent, 2010; City of Renton, 2011; City of Tukwila, 2011).

e. Describe the purpose, type, and approximate quantities of any filling or grading proposed. Indicate the source of the fill.

Track improvements associated with Easement 3 will require clearing, grading, and fill to widen the existing railroad structural prism, expand the rail embankment fill slopes, and construct access roads and prepare work pads. There will be approximately 27,000 cubic yards of fill, 5,500 cubic yards of cut (grading), and approximately 6,800 cubic yards of sub-ballast/crushed aggregate

sub-base for improvements associated with Easement 3. No fill will be placed within Mill Creek, but fill will be placed within the riparian corridor of the creek and along the associated tributary ditch that flows parallel to the tracks on the south side of the creek.

Track improvements associated with Easement 4 will require clearing, grading, fill, and excavation to widen the existing prism and expand the rail embankment slopes. There will be approximately 30,500 cubic yards of fill, 17,500 cubic yards of cut (grading), and approximately 25,500 cubic yards of sub-ballast/crushed aggregate sub-base. An existing 60-inch diameter corrugated metal pipe under the tracks near 29th St. NW will be extended to accommodate the new railroad embankment. Improvements will also involve abandoning existing culverts beneath 29th St NW and installing a new culvert approximately 15 feet west; extending an existing 36-inch diameter corrugated metal pipe beneath the BNSF tracks; realigning the existing ditch to the toe of the new railroad embankment slope, and placement of fill material necessary to expand the rail embankment/structural prism on the west side of the tracks near the Emerald Downs Racetrack.

Clearing and grading, including relocation or demolition of foundations of structures such as signals or signal bungalows would occur in the areas proposed for track improvements. For areas where additional track will be installed, new roadbed will typically require shallow excavation and then fill placement to raise the grade to the level of adjacent tracks. Minor regrading would be required where tracks would be moved or upgraded, or new crossover tracks installed. The top 12-inches of ballast may be replaced as tracks are upgraded.

The source of the fill is not known at this time, but would be approved for use as railroad structural support. Any debris and excess material would be transported off-site to an approved disposal facility.

f. Could erosion occur as a result of clearing, construction, or use?

The potential for soil erosion is generally low in the track improvement areas because of the generally flat conditions and the nature of the construction practices involving compacted stabilized material. However, clearing, grading, excavation, and filling on upland soils could result in erosion and subsequent sediment load to adjacent water bodies in both Kent and Auburn. Potential for erosion during construction would be mitigated with implementation of the measures listed below in section B.1.h and those identified in a project site specific storm water pollution prevention plan (SWPPP).

g. About what percent of the site will be covered with impervious surfaces after project construction (for example buildings or asphalt)?

The existing and proposed subballast, ballast, and gravel road surfaces are generally more pervious than soils in the corridor. Signal foundations, road crossings, hi-rail pads, and signal bungalows are impervious, but comprise less than one percent (1%) of the rail corridor and do not substantially alter the rate of infiltration.

Construction primarily entails removing, relocating, and constructing new sections of track and new signals and foundations. Changes in the runoff coefficient and local infiltration characteristics would be minimal.

There would be a minimal increase in impervious surface associated with footings for signal and signage revisions and the access road at the Mill Creek (Kent) crossing. No new pollution-generating impervious surface would occur; therefore, no new treatment for storm water runoff is proposed.

h. Describe the proposed measures to reduce or control erosion, or other impacts to the earth, if any.

Construction best management practices (BMPs) such as use of stabilized construction entrances, sediment fencing or filter rolls, sediment traps, application of seeding or mulching for soil stabilization, or other techniques would be implemented. A Temporary Erosion and Sediment Control Plan (TESC) and a Stormwater Pollution Prevention Plan (SWPPP) would be required to prevent sediment transport from the project area to surface water bodies. All debris and spoil material would be transported off-site to an appropriate disposal facility. Other erosion control measures would be incorporated as necessary in accordance with requirements of the NPDES permit for construction.

Track improvements would be built to BNSF engineering design criteria that include provisions for seismic safety and to avoid any increase in risk of instability to potential slide areas adjacent to the tracks.

2. Air

a. What types of emissions to the air would result from the proposal (e.g. dust, automobile, odors, industrial, wood smoke) during construction and when the project is completed? If any, generally describe and give approximate quantities, if known.

Construction of the track improvements would require the use of equipment, such as heavy trucks, excavators, pavers, and compressors. Emissions from such equipment could slightly degrade local air quality. Dust from construction

activities could also contribute to suspended particulate matter in the area. These potential effects to air quality would be intermittent and temporary in nature.

For transit projects and other developments affecting traffic, the air pollutant of major concern is Carbon Monoxide (CO). Regionally, the use of transit options promotes the reduction of CO emissions by reducing the total miles driven in automobiles. Increasing the total number of Sound Transit commuter train trips along the corridor from 11 to 13 daily round-trip trains would help reduce CO emissions in the region.

The Tacoma-to-Seattle Commuter Rail EA (Sound Transit, 1998) evaluated the contribution of commuter rail operations to pollutant emissions within the project corridor. The commuter trains utilize conventional diesel-electric locomotives, which are a potential source of CO, nitrogen oxides (NO_x), hydrocarbons (HC), and particulate matter (PM_{10}) emissions. The analysis was based on nine commuter round trip trains daily. It was estimated that the net changes in corridor pollutant levels would result from three key factors: changes in vehicular tailpipe emissions, changes in bus emissions, and emissions generated by commuter train locomotive operations. Combining the estimated reductions in vehicular tailpipe and bus emissions with the estimated increases due to commuter trains, the analysis found that corridor-level emissions of CO and PM_{10} would be reduced under the operation of the Commuter Rail relative to 2010 baseline condition. The analysis also showed that NO_x and HC emissions would be higher due to the addition of commuter rail locomotives. The Seattle-to-Tacoma Sounder Commuter Rail Easements and Improvements (Easements 1 and 2) DCE (Sound Transit, 2009) found that this trend would continue with the addition of two round trip commuter trains under the Easements 1 and 2 project.

The proposed project (Easements 3 and 4) is expected to continue this trend of incremental changes in corridor-level emissions. There would be further reductions in corridor-level emission of CO and PM_{10} and further increases in NO_x and HC emissions from that described in the 1998 EA. Quantities of diesel particulate matter from the additional locomotives would be small in relation to other nearby diesel sources, particularly the diesel truck traffic on local roads and highways.

Air Quality Conformity

The Metropolitan Transportation Plan (MTP) entitled Transportation 2040 was reviewed by USDOT and adopted by the Puget Sound Regional Council (PSRC) on May 20, 2010. The Central Puget Sound Regional Transportation Improvement Program (TIP) for 2010-2013 was reviewed by USDOT. The proposed improvements of which the easements are a part are listed in both Appendix B to Transportation 2040 (a MTP) and the Central Puget Sound

Regional 2010-2013 TIP, which was found to conform to the CO maintenance plan as required by the federal Clean Air Act.

The proposed track improvements by BNSF are exempt under air quality conformity requirements based on WAC 173-420-110 (h) and 40 CFR 93.126, Exempt Projects, "Rehabilitation or reconstruction of track structures, track, and trackbed in existing ROW." Thus, a project-level air quality conformity analysis and hot-spot analysis are not required.

While the proposal requires acquisition of narrow strips of property along portions of the BNSF ROW and the project increases track capacity, the acquisition would not increase trackage capacity of the corridor nor cause any additional emissions beyond that which would result if the project were contained within the existing ROW corridor. There would be no appreciable difference in air quality impacts so the proposal would retain its exempt status. The addition of two round trip trains would also not trigger a project-level conformity analysis and hot-spot analysis because no changes to the commuter rail stations or parking are proposed as part of the current project, and therefore no increase in parking capacity or size and configuration of the stations would occur.

This exempt status of both the track improvements and the two additional round trip trains was confirmed by Kelly McGourty, Air Quality Program Manager at the Puget Sound Regional Council (PSRC), who is the regional expert on air quality conformity (McGourty, 2011). Future projects resulting from the Sounder Access Study (as discussed in section A.11) could require project-level air quality conformity depending on the nature of the improvements proposed, and potentially a hot-spot analysis if determined to be necessary.

Greenhouse Gas Emissions

Sounder commuter rail promotes travel mode shift and reduces vehicle miles traveled by increasing use of transit and reducing private automobile use for commutes and other trips. This results in a reduction in greenhouse gas (GHG) emissions. Sound Transit estimates that mode shift benefits from commuter rail resulted in a reduction of 41,152 metric tonnes of carbon dioxide equivalents (tonnes CO_{2e}) in 2007 (DRAFT Sound Transit Greenhouse Gas Inventory and Criteria Pollutant Emission Inventory Report, December 2010). Over the life of the Sounder system, this would result in substantial reductions in GHG emissions. In addition, Sounder fuel consumption decreased 1.5% from 2010 to 2011, which results in 186.3 tons of CO2 not released. With the increase in ridership of 7.6% over the same period, CO2 per rider decreased from 10.5 pounds per boarding in 2010 to 9.6 pound per boarding in 2011. The project, as part of a larger transit system, would have indirect effects on GHG emissions. The Sounder Commuter Rail system supports higher density development and commuting to and from urban centers throughout the region by means other than automobiles. Commuter

rail may also relieve congestion on highways and streets, which can reduce GHG emissions from those sources. Over time, with the measures that Sound Transit is currently implementing to reduce GHG, the GHG emissions from constructing and operating the track improvements and additional commuter trains are likely to be more than offset by the reduction in GHG emissions accomplished by the expanded commuter rail system.

Independent of this project, Sound Transit is taking steps to reduce the GHG emissions of its commuter rail system overall as well as on a per passenger mile basis. For example, the Wayside Power Units at Layover Facilities and Automatic Engine Start-Stop System that Sound Transit is currently implementing would potentially reduce the CO_2 emissions from the Sounder system by over 1,000 tons of CO_2 per year, in addition to substantial reductions in other GHG emissions (Young, personal communication, 2012). Sound Transit ridership is also increasing. Sound Transit has a goal of increasing ridership per hour of service operation. Reductions in GHG emissions from equipment and facilities, and increases in ridership relative to hours of service operation will reduce the rate of GHG emissions per passenger-mile.

b. Are there any off-site sources of emissions or odors that may affect your proposal? If so, generally describe.

There are no off-site sources of emissions or odors that would affect construction or operation of the proposed project.

c. Describe proposed measures to reduce or control emissions or other impacts to air, if any.

The construction contractor would be required to comply with all relevant federal, state, and local air quality laws, including Puget Sound Clean Air Agency (PSCAA) requirements.

Appropriate best management practices (BMPs) would be employed to reduce surface and air movement of dust during grading, demolition, and construction activities. Construction-related mitigation measures may include:

- Compliance with applicable recommendations in the Washington Associated General Contractor brochure "Guide to Handling Fugitive Dust from Construction Projects."
- Impervious surfaces on the site will be swept, vacuumed, or otherwise maintained to suppress dust.
- Appropriate project-specific and appropriate BMP's for disturbed soil covers and/or stockpiled materials will be identified in the Construction SWPPP.
- Construction will be planned to minimize exposing areas of earth for extended periods.

- Haul trips will be planned to avoid or reduce the need to stockpile materials that could generate dust, such as stockpiled soil or rock.

3. Water

a. Surface:

1. Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, and wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into.

The proposal involves use of the existing BNSF corridor from Seattle to Tacoma, which crosses over the Duwamish, Green, White and Puyallup Rivers. Track improvements are proposed to occur in the vicinity of Mill Creek and its associated tributary ditch as well as eight wetlands for Easement 3 in Kent and Renton. The track improvement area associated with Easement 4 includes two tributary ditches to Hill Creek and another eight wetlands in Auburn.

There are a total of sixteen wetlands that could be affected by the project. See Figure 5a for the eight wetlands in the vicinity of Easement 3 improvements; and Figure 5b for the eight wetlands in the vicinity of Easement 4 improvements. For a detailed description of each of the wetlands, see Attachment A *Details of Wetlands*.

Impacts to wetlands will be mitigated according to the requirements of the Seattle Regulatory District of the United States Army Corps of Engineers and the Washington State Department of Ecology.

2. Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans.

The proposed track improvements associated with Easement 3 would require construction adjacent to Mill Creek in Kent. Work in proximity to Mill Creek and its associated tributary ditch includes the placement of fill on the east side of the existing rail bed to accommodate a new third track, access roads, and work platforms along the top of bank of Mill Creek to allow for construction of a new bridge adjacent to the existing bridge over Mill Creek. The proposed action will not require any in-water work within Mill Creek or the tributary ditch. New piles to support the new bridge will be installed in the dry.

Track improvements associated with Easement 4 will require work in proximity to Hill Creek and its associated tributary ditches near Emerald Downs Racetrack in Auburn. Work in proximity to Hill Creek and its associated tributary ditches includes extending an existing 60-inch diameter culvert, which conveys Hill Creek Tributary South under the tracks, to accommodate the new railroad embankment. An existing damaged culvert under 29th Street NW will be abandoned in place and a new culvert installed next to it. An existing 36-inch diameter culvert, which conveys flow from Hill Creek Tributary North under the tracks, will be extended to accommodate the new railroad embankment. The culvert continues west through wetlands and is eventually reconnected to open ditch channel along the Union Pacific Railroad (UPRR). The culvert construction area is located approximately 2,100 feet upstream of the ditch's confluence with Hill Creek.

3. Estimate the amount of fill and dredge material that could be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill materials.

No fill or dredge material would be placed within Mill Creek (Kent) for improvements associated with Easement 3, but fill material will be placed within the riparian corridor and along an associated tributary ditch to increase the rail prism, expand the rail embankment slopes, and construct the access road. Unavoidable fill will be placed in three of the eight wetlands located within the track improvement area of Easement 3 totaling approximately 0.5 acre of fill.

Fill will be required to widen the existing rail prism and expand the rail embankment slope for improvements associated with Easement 4. All eight of the wetlands located within the track improvement area will require unavoidable filling of approximately 5.4 acres.

4. Will the proposal require surface water withdrawals or diversion? Give general description, purpose, and approximate quantities, if known.

Track improvements associated with Easement 4 will require diversion of water during work to extend and replace culverts and relocate the tributary ditches of Hill Creek. Diversion by-pass plans providing fish protection will be submitted to permitting agencies for approval.

5. Does the proposal lie within a 100-year flood plain? If so, note location on the site plan.

The boundaries of the 100-year floodplains within the project area were identified on Flood Insurance Rate Maps (FIRM) prepared by the Federal Emergency Management Agency (FEMA). (See Figures 3a and 3b.) The floodplain extends from the Green River to the western edge of the BNSF ROW, and discontinuously along the area of track improvements associated with Easement 3 and in the northern portion of the track improvement area associated with Easement 4. The floodplain also extends from Springbrook Creek to the eastern edge of the ROW along portions of track improvements associated with Easement 3. The fill that is placed in areas of the floodplain that extend onto the ROW could have a minor impact on flood elevations in the area, though any effect would be negligible. The FEMA floodplain designation in all areas of the track improvements is Zone AE (AE = areas where there is at least a 1% annual chance of inundation due to flooding).

There have been no historic incidents of flooding interfering with railroad service within the area of proposed track improvements. The proposed track improvements would be elevated from the 100-year floodplain, and would not be affected by flooding.

6. Does the proposal involve discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.

No waste materials would be discharged to surface waters from construction or operation of the proposed project.

b. Ground

1. Will ground water be withdrawn, or will water be discharged to ground water? Give general description, purpose, and approximate quantities if known.

No ground water would be withdrawn, nor would water be discharged to ground water as part of the proposed project.

2. Describe waste material that will be discharged into the ground from septic tanks or other sources, if any. Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) is expected to serve.

No waste material would be discharged into the ground from construction or operation of the proposed project.

c. Water Runoff (including storm water)

1. Describe the source of runoff (including storm water) and method of collection and disposal, if any (including quantities if known). Where will this water flow? Will this water flow into other waters? If so, describe.

The only source of runoff would be precipitation. To prevent construction generated sediments from traveling beyond the work limits during construction, BMPs would be utilized specific to this project and location. These BMPs include such measures as stabilized construction entrances, sediment fencing or filter rolls, and sediment traps. A Temporary Erosion and Sediment Control (TESC) Plan and a Stormwater Pollution Prevention Plan (SWPPP) would be required to prevent sediment transport from the project area to water bodies.

The amount of runoff following construction would not be substantially different from that prior to construction due to the minimal change in runoff characteristics of the construction area and materials. Stormwater runoff from the BNSF ROW enters drains and/or ditches.

2. Could waste materials enter ground or surface waters? If so, generally describe.

Waste materials would not enter groundwater. Storm water runoff would be treated and conveyed to the storm water drainage system of adjacent local government utilities.

d. Describe proposed measures to reduce or control surface, ground, and runoff water impacts, if any.

During construction, BMPs identified in the TESC Plan and SWPPP would be employed as described in 3.c.1 above.

4. Plants

a. Types of vegetation found on-site:

Deciduous trees: None at track improvement areas
Evergreen trees: None at track improvement areas
Shrubs: Himalayan blackberry, clustered rose, snowberry, Scouler's willow, red-osier dogwood, sitka willow, pacific willow
Grass: broadleaf herbs (primarily invasive and pioneer species)
Pasture: None

Wet Soil Plants: Reed canarygrass, common cattail, hardhack spirea, small-fruited bulrush, soft rush, horsetail, Watson's willow herb, creeping buttercup; stinging nettle
Water Plants: None

b. What kind and amount of vegetation will be removed or altered?

Most track improvements would involve reconfiguring existing or installing new rail infrastructure in existing developed areas. Much of the areas of work are already devoid of vegetation cover, as it is a mainline, interstate railroad grade, vegetation-controlled areas, or adjacent paved areas. Scattered patches of Himalayan blackberry are common.

c. List threatened or endangered species or critical habitat known to be on or near the site.

The Washington Department of Natural Resources (WDNR) Natural Heritage Program has not identified any rare plants or vegetative communities within four miles of the site (WDNR, 2010).

d. Describe proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on-site.

Impacts to wetlands and wetland buffers will be mitigated according to the requirements of the Seattle Regulatory District United States Army Corps of Engineers and the Washington State Department of Ecology.

Permanent native grass seeding and mulching would be used to cover areas outside the rail grade disturbed by construction. Any areas disturbed as a result of rerouting the ballast-lined ditch would be planted with appropriate native grass seed and shrub species.

5. Animals

a. Underline any birds and animals which have been observed on or near the site or are known to be on or near the site:

Fish: Track improvements associated with Easement 3 will include a crossing of Mill Creek, which is a tributary to Springbrook Creek. Coho salmon and resident coastal cutthroat trout have been documented within Mill Creek. Chinook salmon have been documented, and winter steelhead are presumed to occur within Springbrook Creek, approximately 600 feet downstream of the Easement 3 track improvement area.

Electrofishing surveys conducted in Mill Creek in 1995 found coho, cutthroat trout, three-spine stickleback, pumpkinseed sunfish, lamprey, sculpins, and speckled dace. All salmonids, lamprey, sculpins, and pumpkinseed sunfish were found above River Mile 4, which is well upstream of the project area. The only fish species found in the lower reaches of Mill Creek were three-spine stickleback and one speckled dace.

Track improvements associated with Easement 4 will include culvert replacement and extensions on two ditches that drain to Hill Creek (Hill Creek Tributary North and Hill Creek Tributary South). Coho salmon have been identified as occurring within the Hill Creek South Tributary ditch; however, their occurrence has only been documented within a short distance upstream of the confluence with Hill Creek, approximately 1,200 feet downstream of the Easement 4 track improvement area. Chinook salmon have been documented and winter steelhead are presumed to occur within Hill Creek near the confluence with Hill Creek Tributary South, approximately 2,000 feet downstream of the Easement 4 track improvement area.

Amphibians: None observed or known at track improvement areas.

Reptiles: None observed or known at track improvement areas.

Birds: American crow, sparrows, starlings.

Mammals: Small rodents.

b. List any threatened or endangered species or critical habitat near the site.

The Washington Department of Fish and Wildlife (WDFW) Priority Habitat and Species database (WDFW, 2010) identified the following in the vicinity of the track improvement areas:

Fish: Coho, pink, fall chum, sockeye and fall Chinook salmon (federally threatened); bull trout (federally threatened); summer and winter steelhead (federally threatened); and resident cutthroat trout. Critical habitat for Puget Sound Chinook salmon and Puget Sound bull trout has been identified within the mainstem Green River; however, track improvements do not extend into these areas.

Wildlife: Osprey nest; green & great blue heron colonies;

Priority Habitat and Species: Coho, pink, fall chum, sockeye, and Chinook salmon; bull trout; coast resident cutthroat trout; steelhead; osprey; great blue

heron; green heron; blue heron breeding colonies; wetlands; palustrine aquatic habitats; biodiversity areas and corridors.

c. Is the site part of a migratory route? If so, explain.

The project site is located within the Pacific Flyway, which is a regional flight corridor for migrating waterfowl and other avian fauna, however the area where the track improvements would occur is not considered important habitat for migrating birds. The Pacific Flyway extends from Alaska south to Mexico and South America.

d. Proposed measures to preserve or enhance wildlife, if any.

Impacts to wildlife habitat, such as wetlands and streams, have been minimized to the extent feasible. Unavoidable impacts to wetland and stream areas and functions will be mitigated in accordance with the requirements of the US Army Corps of Engineers and the Department of Ecology.

Impacts to fish will be mitigated by employing appropriate fish exclusion measures during construction in the Hill Creek tributary ditches. Work in the tributary ditches and over Mill Creek will be done during the regulatory permit condition work windows. In addition to the in-water work restrictions, flows within Hill Creek tributary ditches are anticipated to be extremely low during the proposed work timing of summer and early fall, which will further reduce the potential for occurrence of fish during construction. All work along Mill Creek will be conducted above the ordinary high water mark (OHWM) and will not require disturbance to the stream.

Appropriate BMPs will be in place during construction to preserve and protect aquatic habitats from erosion of upland soils and subsequent sedimentation and turbidity of receiving waters and also from the potential for accidental spills of construction related contaminants including fuels, oil, grease, and hydraulic fluid. These will include a Temporary Erosion and Sediment Control (TESC) plan, Spill Prevention Control and Countermeasure (SPCC) plan, and Storm Water Pollution Prevention Plan (SWPPP). If implemented correctly, no impacts to wildlife are expected as a result of this project; therefore, no other measures are proposed to preserve or enhance wildlife.

6. Energy and Natural Resources

a. What kinds of energy (electric, natural gas, oil, wood, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.

Electricity would be used at the site for the upgraded and new signals. The additional commuter rail trains will operate using diesel-electric locomotives.

b. Would the project affect the potential use of solar energy by adjacent properties? If so, explain.

The project would not affect the use of solar energy by any adjacent properties.

c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any.

The overall effect of the track improvements is to improve reliability and efficiency of train traffic, which would improve fuel efficiency of both the commuter trains and freight trains that use the rail corridor. The overall effect of providing additional trains on the easement corridor is to further reduce fuel consumed in single occupant vehicles. Any specific conservation features related to track improvements will be defined, considered, and implemented during the final design phase of the project.

See also Section B.2.a. (GHG), regarding Sound Transit's independent efforts to reduce train fuel consumption and emissions.

7. Environmental Health

a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spills, or hazardous waste that could occur as a result of this proposal? If so, describe.

A search of the EPA Superfund Information Systems database showed there is no known or potential hazardous material contamination in the project limits (EPA, 2011). Based on this review, no known contamination would be encountered during construction, and exposure of the public to potentially contaminated soil is not expected to occur.

The project contractor for the track improvements may have small amounts of oil, hydraulic fluid, construction adhesives, cleaning solvents, and similar chemical compounds that would be used or applied on-site during construction. Other than these temporary construction uses, there would be no hazardous materials stored on-site.

BNSF rail operations will continue to function as a freight railroad line, which may transport hazardous materials. Continued railroad operations will be consistent with applicable Hazardous Waste Transport rules and regulations.

1. Describe special emergency services that might be required.

No special emergency services would be required during construction. Per BNSF Standard Operating Procedures (SOP), the contractor would submit an emergency action plan for construction prior to starting.

Both Sound Transit and BNSF have existing safety plans that include coordination with local emergency response agencies in the event of an emergency during operation of the trains. Sound Transit's safety plan complies with BNSF's safety plan, and Federal Railroad Safety Board standards.

2. Describe proposed measures to reduce or control environmental health hazards.

During construction, the contractor would be required to follow the applicable Washington Industrial Safety and Health Administration (WISHA) regulations. BNSF and/or their engineering consultant will define the appropriate engineering control methods and personal protection equipment for health and safety. In addition, the contractor's employees are required to attend a contractor safety orientation course (www.railroadcourses.com). Although no known contaminants exist in the area of track improvements, a formalized plan would be required for removal and treatment or disposal of any contaminated soil or groundwater encountered during construction. Any such occurrence would be managed using standard approaches in accordance with applicable requirements.

b. Noise

1. What types of noise exist in the area which may affect your project (for example: traffic, equipment operation, other)?

The project area is currently a mainline, interstate railroad. Currently BNSF tracks are used by freight, intercity passenger service (Amtrak) trains, and Sound Transit commuter trains. The relatively high volume of existing train traffic in the corridor represents a substantial source of noise. Freight trains typically are of much greater length and weight than passenger and Sound Transit commuter trains, and they contribute more noise and vibration. Other sources of noise in the project area include vehicle traffic on and Interstate 5 (I-5), Interstate 405 (I-405), SR 167, SR 99, SR 18, and industrial activity.

2. What types and levels of noise would be created by or associated with the project on a short-term or long-term basis (for example: traffic, construction, operation, other)?

During construction of the track improvements there would be temporary increases in sound levels near active areas of construction and along roadways used for construction vehicles. The increase in sound levels would depend on the type of equipment used and the amount of time it is in use. Typical construction equipment could include on-track equipment, dump trucks, dozers, excavators, graders, compactors (rollers), crane, and an impact pile driver.

Pile driving for bridge construction associated with Easement 3 will be a major noise generator of the proposed track improvements. This activity will be temporary and short-term, near the Mill Creek (Kent) crossing and at Longacres Way (Tukwila).

Adjacent to the BNSF ROW there are approximately 10.6 miles of residential areas within 750 feet of the tracks between Seattle and Tacoma. In addition, the mainline passes within 750 feet of several community areas, park and recreation areas, and schools. An analysis was prepared as part of the Tacoma-to-Seattle Commuter Rail EA (Sound Transit, 1998) to determine the potential for noise impacts from operating nine Sounder commuter rail trains during weekday peak hours (nine morning peak trains and nine afternoon peak trains) using applicable agency noise regulations and ordinances from FTA, FHWA, WSDOT, and the Washington Administrative Code. As part of the analysis, the potential noise increase due to operation of the proposed commuter rail service was evaluated against the measured ambient noise conditions. Most of the noise sensitive receivers near the monitoring sites were not predicted to increase over their existing noise levels (Ldn) from the initiation of commuter rail service. Only one location was expected to experience an increase, and the increase was predicted to be 1 decibel. Similarly, the analysis included in the 1998 EA showed that vibration levels produced by commuter rail trains would be less than the vibration levels produced by freight trains already using the corridor.

Noise levels near the BNSF tracks are high and commuter rail train noise is not expected to noticeably increase noise levels. The tracks presently carry an average of thirty one-way freight, ten one-way Amtrak, and eighteen one-way Sounder commuter train trips per day. The relatively high volume of existing train traffic in the corridor represents a substantial source of noise in areas adjacent to the rail corridor. Given that existing noise levels near the tracks are high, and commuter trains contribute a lower level of noise than the more frequent freight trains due to shorter length and less weight of the trains, the addition of two round-trip Sounder

commuter rail trains per day would contribute a relatively minor amount of noise (Sound Transit, 2009).

Amtrak, BNSF, and Sounder trains currently run up to their maximum allowed speeds where they can (79 mph). While the proposed project would not increase the allowable speed limit for freight or passenger rail, average train speed could increase due to improved efficiency and reliability of trains resulting from the track improvements. The track improvements would reduce the overall time that trains pass any given location, which, in combination with the reduced stopping, starting, and idling activity, would be expected to offset potential noise and vibration effects from an increase in average train speed and from the slight increase in number of commuter trains operating on the mainline.

3. Describe proposed measures to reduce or control noise impacts, if any.

The following measures would help reduce the potential effects of noise generated by construction of the track improvements:

- All construction vehicles and equipment would be properly maintained.
- Stationary construction equipment would be placed as far away from sensitive receiving locations as possible.
- Construction activities will comply with City of Tukwila (TMC 8.22), City of Renton (RMC Chapter 7), City of Kent (KMC 8.05), and City of Auburn noise standards (AMC 8.28.010) to the extent feasible.

8. Land and Shoreline Use

a. What is the current use of the site and adjacent properties?

The site is currently used as an interstate, mainline railroad with freight, intercity passenger trains (Amtrak), and Sounder commuter train use. The entire easement corridor spans approximately forty miles from King Street Station in Seattle through Tukwila, Renton, Kent, and Auburn in King County; and through Sumner, Puyallup, and Tacoma in Pierce County. Surrounding land use along the entire 40-mile corridor varies and was previously described in the Tacoma-to-Seattle Commuter Rail EA (1998). See Figure 1 for location of the existing Seattle-to-Tacoma Sounder Commuter Rail corridor.

The surrounding land use of the area of track improvements associated with Easement 3 consists of mixed use areas of Tukwila and Renton (urban centers), commercial uses (i.e., warehouses, distribution facilities), industrial properties, I-405, and SR 167 (Figure 2a).

The track improvements associated with Easement 3 would occur within the existing BNSF ROW except for a short length of the project corridor within Renton and Kent where the project will require narrow strips of property acquisition, and would be consistent with current zoning both within and outside of existing ROW.

The surrounding land use adjacent to the track improvements associated with Easement 4 consists predominantly of commercial industrial properties, SR 167, SR 18, Emerald Downs Racetrack, and downtown Auburn. See Figure 2b for the location of the proposed track improvements. While not generally directly adjacent to the rail tracks and corridor, residential uses are located near the southern extent of the track improvements near downtown Auburn in areas zoned commercial.

b. Has the site been used for agriculture? If so, describe.

The site has not been used for agriculture since the railroad was constructed. It is not known if it was used for agriculture prior to railroad use.

c. Describe any structures on the site.

There are no structures in the area of track improvements, other than the existing railroad tracks, associated signals, railroad buildings, railroad switching mechanisms, and similar railroad facilities. There are also street overpasses that cross the tracks in several locations along the project corridor.

d. Will any structures be demolished? If so, what?

As indicated in the project description, certain sections of existing track and turnouts would be removed, rehabilitated, or replaced. In some cases this would include removing existing signal structures, relocating them, replacing them with similar structures, or removing them because they would be obsolete with the new track improvements.

e. What is the current zoning classification of the site?

Zoning designations along the entire easement corridor were previously described in Tacoma-to-Seattle Commuter Rail EA (1998).

Zoning for the area of proposed track improvements through Tukwila is predominantly Commercial/Light Industrial (C/LI), Tukwila Urban Center (TUC), Regional Commercial Mixed Use (RCM), and Low Density Residential (LDR) (City of Tukwila, 2010).

Zoning for the area of proposed track improvements in Renton is predominantly Industrial Heavy (IH), Industrial Medium (IM), Commercial Office (CO), and Resource Conservation (RC) (City of Renton 2010).

Zoning for the area of proposed track improvements through Auburn is predominantly Light Industrial District (MI), Heavy Industrial District (M2), Light Commercial District (C1), Central Business District (C2), Heavy Commercial District (C3), Public Use District (P1), Downtown Urban Center (DUC) (City of Auburn, 2010).

f. What is the current comprehensive plan designation of the site?

Comprehensive Plan designations along the entire easement corridor were previously described in Tacoma-to-Seattle Commuter Rail EA (Sound Transit, 1998).

The City of Tukwila Comprehensive Plan (2008) designates the areas of the proposed track improvements as High Intensity, Tukwila Urban Center and Commercial/Light Industrial.

The City of Renton Comprehensive Plan (2009) designates the area of the proposed track improvements as Employment Area Valley.

The City of Kent Comprehensive Plan (2007) designates the areas of the proposed track improvements as Industrial, Manufacturing/Industrial Center, Mixed Use, and Urban Center.

The City of Auburn Comprehensive Plan (2010) designates the areas of the proposed track improvements as Light Industrial, Heavy Industrial, Light Commercial, Heavy Commercial, and Downtown.

g. If applicable, what is the current shoreline master program designation of the site?

The area of proposed track improvements in the City of Kent is within the shoreline jurisdiction of Springbrook Creek, designated as Urban Conservancy and High Intensity.

The area of proposed track improvements in or near the shoreline jurisdiction of the Green River in the City of Tukwila is designated as Urban Conservancy, and in the City of Renton, the shoreline jurisdiction is designated as Shoreline Isolated High Intensity.

The BNSF tracks cross shoreline jurisdiction in other locations, but there would be no development in those areas associated with this project.

h. Has any part of the site been classified as an "environmentally sensitive" area? If so, specify.

The area of proposed track improvements is located near the following critical areas: a) aquifer recharge areas (between MP 18.3 and south of Kent Station and NE of MP 23.4); b) geologically hazardous areas(seismic area located near MP 18.7) (City of Auburn, 2010; City of Kent, 2010).

Large portions of proposed track improvement areas are located within the 100-year floodplain as described in Section B.3.a.(5) and are also located in or near wetlands as described in Section B.3.a.(1).

i. Approximately how many people would reside or work in the completed project?

None.

j. Approximately how many people would the completed project displace?

None.

k. Describe proposed measures to avoid or reduce displacement impacts, if any.

Not applicable.

l. Describe proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any.

The project is a continuation and intensification of an existing use. The areas of track improvements are in compliance with local zoning regulations.

Measures to ensure the proposed project is compatible with existing and projected land uses include carefully designing the project to be safe and functional.

9. Housing

a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.

The proposed project would not include any housing.

b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.

None.

c. Describe proposed measures to reduce or control housing impacts, if any.

Impacts to housing would not occur as a result of this project; therefore, mitigation measures are not proposed.

10. Aesthetics

a. What is the tallest height of any of the proposed structure(s), not including antennas? What is the principal exterior building material(s) proposed?

The tallest structures would be cantilevered signal bridges, which would be up to 40 feet high. Signal bungalows may also be added or relocated. Bungalows are metal sided structures approximately 10 feet in height.

b. What views in the immediate vicinity would be altered or obstructed?

Improvements proposed would be similar in design and character to existing track and signal facilities in this segment of the rail corridor. The new signal bridges would be located adjacent to rail, industrial, commercial, and undeveloped properties, and would not have an adverse effect on key views from residences or public spaces. No scenic vistas would be affected.

c. Describe proposed measures to reduce aesthetic impacts, if any.

Improvements proposed would be similar in design, character, and height to existing rail bridge, track, and signal facilities in this segment of the rail corridor. This segment of the rail corridor is dominated by rail, industrial, and commercial uses adjacent to the tracks. The addition of track improvements and related facilities would be a change in the visual environment, but no aesthetic impacts are anticipated.

11. Light and Glare

a. What type of light and glare will the proposal produce? What time of day would it mainly occur?

The only sources of light would be the railroad signal system, which would operate continuously, and the lights on the trains. The signal system lights are only visible in a limited line-of-sight along the tracks, similar to existing signals. The purpose of the signal system lights is to safely signal trains. Signal system lights would not interfere with views or affect safety off site.

b. Could light or glare from the finished project be a safety hazard or interfere with views?

No. The purpose of the signal system lights is to safely signal trains. Signal system lights are only visible in a limited line-of-sight along the tracks and would not interfere with views or affect safety off-site.

c. What existing off-site sources of light or glare may affect your proposal?

There are no off-site sources of light or glare that would adversely affect the proposed project.

d. Describe the proposed measures to reduce or control light and glare impacts, if any.

No light and glare impacts are anticipated, and therefore, no additional measures are proposed.

12. Recreation

a. What designated and informal recreational opportunities are in the immediate vicinity?

There are approximately twenty-five park and recreation facilities located in the vicinity of the entire easement corridor from South Tukwila to Tacoma as previously described in the Tacoma-to-Seattle Commuter Rail EA (1998).

Public parklands and recreation areas near the proposed track improvements include the following: Fort Dent Park (Tukwila), Interurban Trail (Tukwila to Auburn), Springbrook Greenbelt (Renton), Kiwanis Tot Lot #2 (Kent), GSA Ballfield Park (Auburn). All track improvements near these areas would be made within the existing ROW and would not affect parklands or access.

There are no other designated or informal recreational opportunities located in the immediate vicinity of the area of proposed track improvements that would be affected by the project.

b. Would the proposed project displace any existing recreational uses? If so, describe.

No.

c. Describe proposed measures to reduce or control impacts on recreation, including recreational opportunities to be provided by the project or applicant.

There are no recreational uses on the project site. Neither the addition of two commuter trains nor the construction of track improvements would have impacts to recreational uses. The trains would operate on the BNSF track where existing freight, intercity passenger, and commuter train use currently occurs.

13. Historic and Cultural Preservation

a. Are there any places or objects listed on or eligible for national, state, or local preservation registers known to be on or next to the site? If so, generally describe.

Historic

Sound Transit has defined the Area of Potential Effect (APE) for historic resources to include properties adjacent to the rail corridor in an area that extends out to about 200 feet from the center line of proposed track improvements. No previously recorded historic resources were identified for the Easement 3 improvements area. The Longacres Historic District is located within 200 feet of the proposed project; however, this district is likely not eligible for listing in the National Register or the Washington Historic Register (LAAS, 2004). One historic resource has been identified within or near the project's APE for improvements associated with Easement 4: the Farmer's Warehouse located at 232 C Street NW, Auburn (eligible for the National Register). There are numerous inventoried historic properties within a mile of the APE, primarily located to the south in downtown Auburn. Many of these buildings are clustered around Main Street and include structures with commercial or residential architectural significance. Buildings, bridges, and trestles associated with the trackage of the BNSF corridor were previously evaluated against the Historic American Engineering Record (HAER) inventory of such structures in Washington State (Soderberg 1980 in Sound Transit, 1998). None were found to meet NRHP criteria.

As part of the archaeological reconnaissance survey conducted for the project, historic era properties observed in the project area during the field reconnaissance were identified. Two historic era, railroad related artifacts and two historic structures were identified adjacent to the BNSF ROW. The two artifacts (a bottle

and an insulator related to the railway) were isolated finds and, therefore, do not comprise a historic site. As isolated finds, they are not eligible for listing on the NRHP.

The two historic structures, a warehouse and a barn, were encountered at approximately MP 19.6, adjacent to the APE. Both structures were evaluated in reconnaissance level Historic Inventory Report forms (PRA, 2011a; 2011b). The barn was constructed in 1931. The warehouse was constructed in 1939 to replace a warehouse built in 1931 and burned in 1938. The original owner of both buildings was Frank Natsuhara, son of Chiyokichi Natsuhara. FTA and Sound Transit determined that the buildings are not eligible for the NRHP, and the Washington Department of Archaeology and Historic Preservation (DAHP) concurred in its letter dated January 10, 2012.

Cultural

Sound Transit has defined the APE for cultural and archaeological resources in two dimensions: horizontally, as the project construction limits (the area of potential ground disturbance), and vertically, as the depth of potential excavation during project construction. The vertical APE for cultural and archaeological resources will vary from minor ground disturbance to the approximately six feet of depth needed for signal foundations. Additionally, piles required for elevated structures may be driven to a depth of up to 100 feet. A review of available reports prepared for areas within the corridor found that no archaeological sites have been identified within its boundaries (LAAS, 2004; HRA, 2005). Potential types of archaeological deposits near these project areas could include hunter-gatherer or historic cultural resources. Prehistoric or ethnographic resources might be associated with resource procurement, such as salmon fishing and processing, and camp middens. Historic deposits could include structural remains, machinery from farming or industry, railroad beds or trackage, and historic refuse (Sound Transit, 1998).

As a part of the current project, DAHP archival records and the Washington Information System for Architectural and Archaeological Records Data (WISAARD) were checked for archaeological resources listed or eligible for listing on the National Register of Historic Places or Washington Historic Register within the project APE. No previously recorded archaeological resources were identified in the project APE.
New track and signal construction work would occur predominantly in the BNSF ROW; however, some excavations would be required in areas adjacent to the BNSF ROW. Previous archival and field efforts completed for the Tacoma-to-Seattle Commuter Rail EA (1998) indicate there is a low probability for the project activities within the fill area of the BNSF ROW to impact prehistoric, ethnographic or historic resources. Excavations within the existing BNSF ROW for signal foundations would be relatively shallow (approximately 6 feet deep).

The potential to uncover any archaeological resources during construction of signal foundations is low. For excavation in areas requiring fill for new track and permanent access routes, both in areas of existing BNSF ROW and areas adjacent to the existing ROW, it could be necessary to excavate existing soils to a depth of up to 5 feet. Piles for the proposed construction of the bridges over Mill Creek and Longacres Way would be driven to depths of up to approx. 100 feet; and for the retaining wall at I-405, depths would be approximately 75 feet.

As part of the current project, an archaeological reconnaissance survey was conducted for the project APE on property owned by BNSF (ESA, 2011). The purpose of the survey was to supplement the previous cultural resources survey completed for the Tacoma-to-Seattle Commuter Rail EA (1998) and identify any archaeologically sensitive areas within the project APE. The study identified an area in the immediate vicinity of Mill Creek between approximately MP 12.2 and 12.5 as archaeologically sensitive. This area, depicted in the reconnaissance survey report, is located within the riparian area of Mill Creek and appears to contain undisturbed native soils, which suggests a potential to encounter buried cultural resources. Within this area, ground disturbance would occur in the expanded ROW and at the bridge crossing of Mill Creek.

Cultural resource surveys have been conducted for other projects in the vicinity of the proposed track improvements, and have included some of the areas outside the BNSF ROW identified for strip property acquisition (*Strander Boulevard SW 27th Street Cultural Resources Assessment* [LAAS, 2004] and *I-405, Springbrook Creek Wetland and Habitat Mitigation Bank Project Final Historic, Cultural, and Archaeological Discipline Report* [HRA, 2005]). The areas of the proposed strip acquisition that have been previously surveyed were identified as areas having a low and moderate probability for hunter-fisher-gatherer, ethnographic period, historic Indian, and historic period non-Indian archaeological resources (LAAS, 2004; HRA, 2005). Although the field investigations for the studies cited above failed to identify any archaeological resources in the Strander Boulevard or Springbrook Creek project APEs, archaeological resources were determined potentially present where the excavation of up to 15 feet of fill and native soils may impact deeply buried archaeological sites. With the much shallower excavations proposed for improvements associated with Easements 3 and 4, it is unlikely that proposed project activities would disturb native soils, and therefore, impacts to potentially buried archaeological resources are not anticipated.

b. Generally describe any landmarks or evidence of historic, archeological, scientific, or cultural importance known to be on or next to the site.

As described above, buildings, bridges, and trestles associated with the trackage of the BNSF alignment were previously evaluated against the Historic American Engineering Record (HAER) inventory of such structures in Washington State

(Soderberg 1980 in Sound Transit, 1998). None were found to meet NRHP criteria.

As described above, two historic, railroad-related artifacts and two historic structures were identified adjacent to the BNSF ROW. The two artifacts (a bottle and an insulator related to the historic railway) were isolated finds and, therefore, do not comprise an historic site. As isolated finds, they are not eligible for listing on the NRHP.

c. Describe proposed measures to reduce or control impacts, if any.

A memorandum of agreement (MOA) was previously entered into by FTA and the State Historic Preservation Officer (SHPO) for construction related to the Tacoma-to-Seattle Commuter Rail Project (FTA and SHPO, 1998). The MOA primarily addressed the compatibility of new commuter rail stations from Seattle to Tacoma with nearby historic buildings. Track improvements and operation of trains were not found to have any effects on historic properties. Since no station improvements are proposed as part of this project, the MOA does not contain any conditions that apply to improvements currently proposed under this project. The project will occur predominantly within the existing BNSF ROW, will not displace or alter any existing non-railroad buildings or structures (including private residences or businesses), will not introduce elements at the site that are out of character with existing railway infrastructure and uses, and will not result in changes to the setting of any historic property located in the vicinity of track improvements, or other properties located in the vicinity of the corridor. As a result, no adverse impacts are anticipated to any buildings in the vicinity of the rail corridor that may be eligible for the National Register of Historic Places (NRHP).

Measures proposed to reduce or control impacts to cultural resources include preparation of an Archaeological Resources Monitoring Plan (ARMP). As part of the ARMP, Sound Transit proposes to develop a preconstruction survey and testing program and an archaeological monitoring program for the area around Mill Creek between MP 12.2 and MP 12.5 in the Easement 3 improvement area discussed above. Coordination with the Washington State Department of Archaeology and Historic Preservation (DAHP) on the preconstruction survey and testing program in the area around Mill Creek is continuing. If any potentially significant archaeological resources are uncovered during preconstruction survey, Native American Tribes, as appropriate, and the DAHP will be contacted for further consultation.

14. Transportation

a. Identify public streets and highways serving the site, and describe proposed access to the existing street system. Show on-site plans, if any.

The BNSF rail corridor from Seattle to Tacoma is adjacent to and is crossed by or crosses over numerous streets, highways, and interstate freeways which were previously described in Tacoma-to-Seattle Commuter Rail EA (1998).

The operation of the two additional round trip trains is not expected to result in any meaningful traffic delays at the five at-grade crossings, including 212th Street in Kent; and 37th Street NW, 29th Street NW, W Main Street, and 3rd Street NW in Auburn. The time that commuter trains require to approach and traverse a crossing is substantially less than that needed by other trains operating on the BNSF mail line (e.g., freight and Amtrak). A commuter train generally moves at speeds of 50 to 79 miles per hour, and would occupy a crossing for 4 to 13 seconds. An additional 30 seconds is required for the gates to lower prior to the arrival of the train, and about 5 seconds following the train's passage for the gates to raise. Traffic volumes at these intersections are generally low, and any delay from the crossing of the two additional round trip trains would be minor.

The Tacoma-to-Seattle Commuter Rail Environmental Assessment (Sound Transit, 1998) included an analysis of the then-proposed action (nine round trip commuter trains), and of the projected level of service (LOS) in 2010 for at-grade crossings potentially affected by that action. Included in this analysis were the crossings that are being addressed by the current analysis of Easements 3 and 4. The 1998 analysis found that proposed commuter rail service was not a critical restraint at any of the crossings, and that baseline LOS for at-grade crossings would not be affected by the addition of commuter trains. It is expected that the potential increase in commuter train service related to Easements 3 and 4 would have no effect on baseline LOS of at-grade crossings.

b. Is the site currently served by public transit? If not, what is the approximate distance to the nearest transit stop?

On this portion of the BNSF rail corridor Sounder commuter trains, a regional public transit mode, currently operate. There are numerous regional, municipal bus routes that connect to the Sounder commuter stations along the project work corridor.

c. How many parking spaces would the completed project have? How many would the project eliminate?

No new parking is proposed for the project, and none would be eliminated. Because of the particular characteristics and combination of travel modes that are unique to each individual station, the provision of parking, bus routes, and/or bicycle facilities, are addressed at the station level. As noted above, if specific improvements at Sounder stations (such as additional parking) are proposed later as part of the Sounder Access Study, separate environmental documentation for these station improvements would be completed at a future time, as appropriate.

d. Will the proposal require any new roads or streets, or improvements to existing roads or streets, not including driveways? If so, generally describe.

The project would not involve new public roadways or expansion of existing public roadways. The only road that would be modified is a private maintenance access road owned and maintained by BNSF.

e. Will the project use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.

The proposal is located on the BNSF rail corridor and the operation of the two additional round-trip trains would use their facilities. Rail access would not be used for construction activities.

f. How many vehicular trips per day would be generated by the completed project? If known, indicate when peak volumes would occur.

The project is not expected to directly generate a substantial number of new vehicular trips. This is because demand is driven by a number of regional and local factors that far outweigh the effect of the modest increase in train capacity and frequency that this project would provide. The project's additional commuter train capacity would allow for daily train ridership to grow over time, which would reduce total vehicle trips on a regional level.

At stations, peak traffic hours are expected between 6:00 and 9:00 AM, and between 3:00 and 6:00 PM. Demand at the station level is driven largely by regional factors, such as the cost of fuel and highway congestion, and local factors, such as the availability of alternate transit modes like express bus service, and availability of parking near the station. Because this project would not affect any of these major factors driving demand for rail ridership, station area traffic is not expected to increase substantially as a result of this project.

g. Describe proposed measures to reduce or control transportation impacts, if any.

The project is not anticipated to result in traffic impacts during operations. The addition of heavy equipment and other construction traffic could temporarily affect traffic in the surrounding neighborhoods. Construction of the track improvements would require temporary road closures of two to three days along some local roads. Alternative routes are available for minor traffic diversions and there would be no major interference in traffic flow on surrounding roadways, including intersections. The following measures would be implemented to reduce the effects of construction traffic on local roadways:

- Construction vehicle parking and staging will not be allowed on public rights of way without local approvals and permits.
- Construction would be staged to minimize overall transportation system congestion and delays.
- The contractor will be required to prepare Traffic Control Plans and coordinate with local jurisdictions where needed to address temporary closures.
- Existing access to all adjacent properties would be maintained throughout construction.

Train traffic will be diverted, as necessary, using existing, alternate track during construction.

15. Public Services

a. Would the project result in an increased need for public services (for example: fire protection, police protection, health care, schools, other)? If so, generally explain.

The project is not expected to generate increased need for public services.

b. Describe proposed measures to reduce or control direct impacts on public services.

No impacts to public services are anticipated.

16. Utilities

a. Underline utilities currently available at the site:
Electricity, natural gas, **water, refuse service, telephone, sanitary sewer**, septic systems, other

b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.

No new utilities are proposed for the project site. The BNSF rail corridor signals and switches would continue to use electrical service.

The project may result in utility disruptions, although BNSF will strive to maintain all utility service during construction.

C. SIGNATURE

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Mark D Johnson

Name (print): Mark S. Johnson

Title: Planning Program Manager, ESA

Date Submitted: April 12, 2012

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FIGURES

Figure 1 Location Map

Figure 2a Track improvements associated with Easement 3

Figure 2b Track improvements associated with Easement 4

Figure 3a Easement 3 FEMA 100-year Floodplain

Figure 3b Easement 4 FEMA 100-year Floodplain

Figure 4 USGS Quad Map

Figure 5a Easement 3 Wetland Map

Figure 5b Easement 4 Wetland Map

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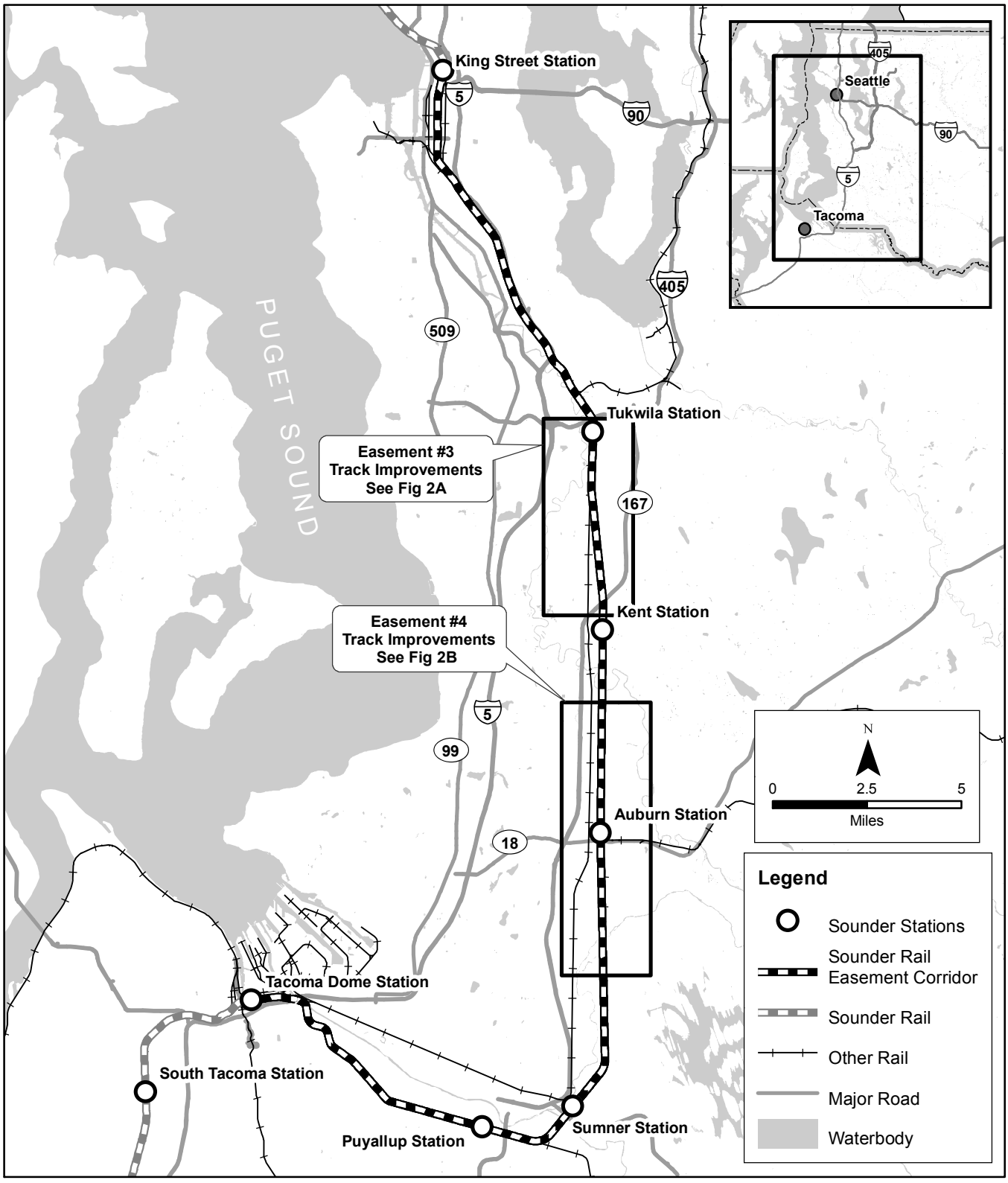
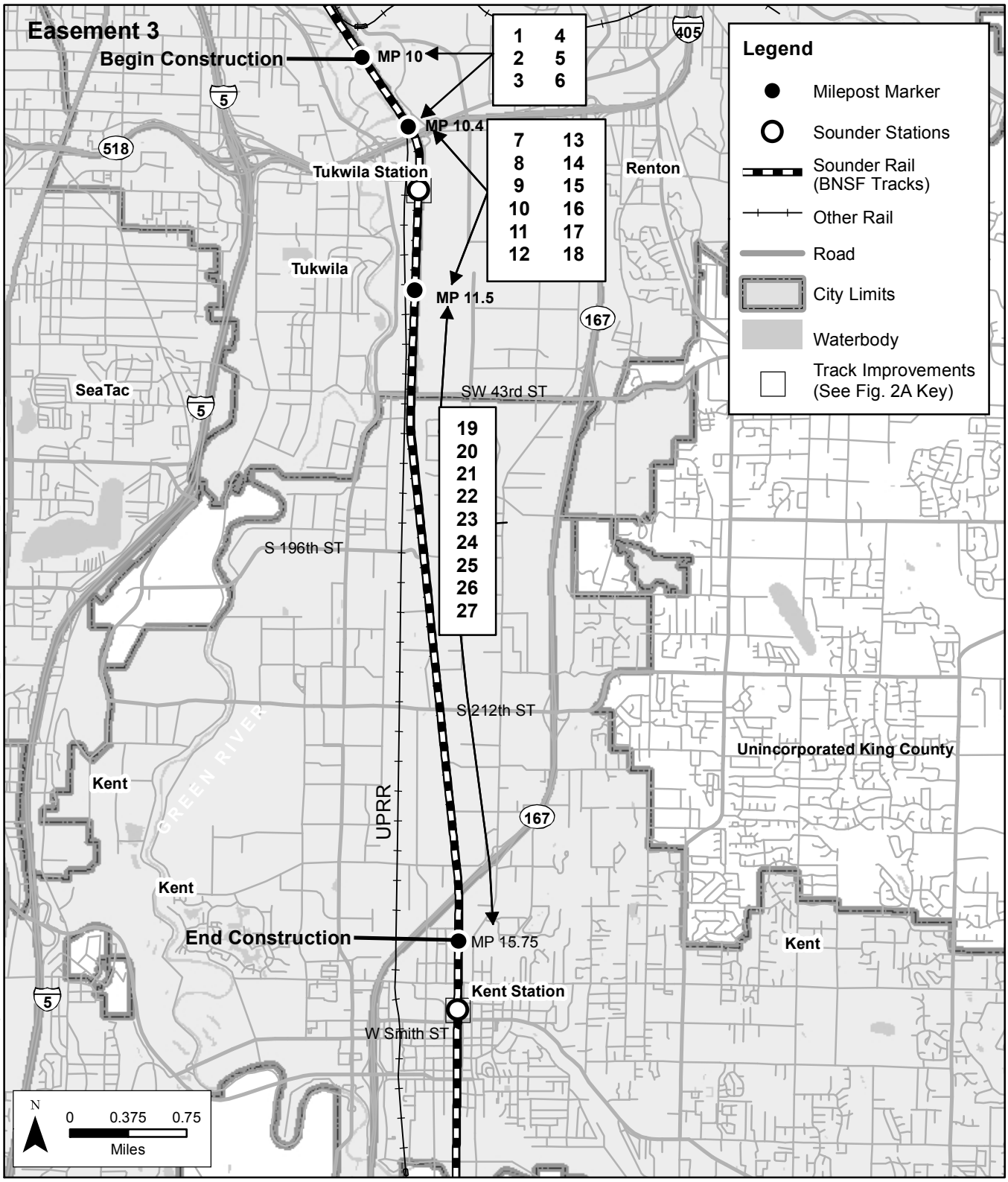


SOURCE: King County, 2002, 2005, 2007.

Figure 1
Location Map
King and Pierce Counties, Washington

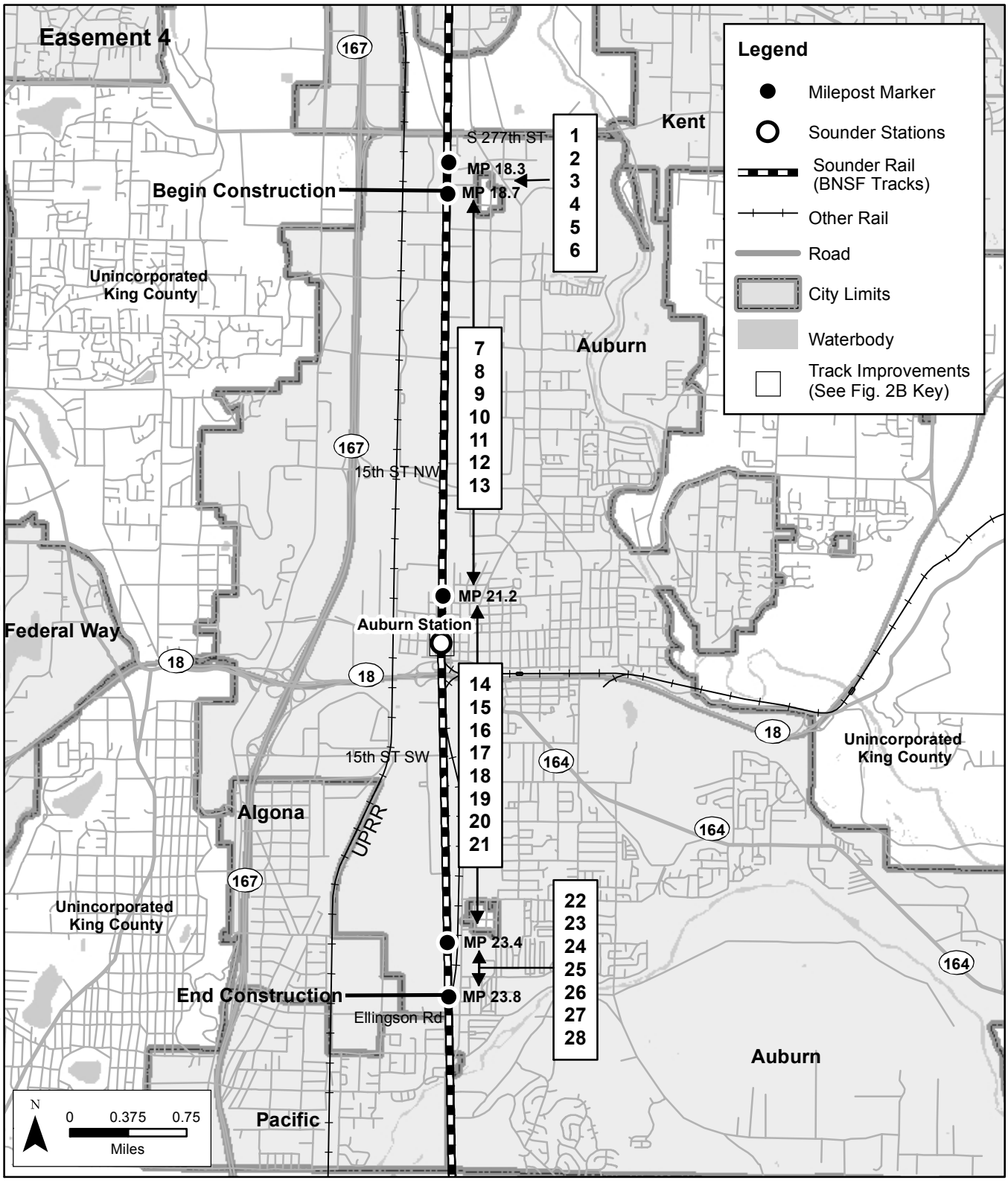


SOURCE: ESA, 2011; King County, 2005, 2007.

Easement #3 Track Improvements (Figure 2A)
Tukwila, Renton and Kent, Washington

KEY: FIGURE 2A, EASEMENT 3 TRACK IMPROVEMENTS (LOCATION AND DESCRIPTION OF TRACK IMPROVEMENTS)

Track Improvements		
Number	**Description of Improvement**	**Location (Mile Post)**
Tukwila Control Point		10 – 10.4
1	Extend third main track westward on east side of Main Line 2 (0.4 track miles)	
2	Install one new industry switch and realign industry track	
3	Add an additional crossover	
4	Rearrange signal appliances for new track configuration	
5	Relocate safety detectors	
6	Relocate utilities including fiber optics	
Add a third main track		10.4-11.5
7	Continue extending third main track westward on east side of Main Line 2 (1.1 track miles)	
8	Construct railroad embankment on east side	
9	Identify and relocate utilities	
10	Relocate BNSF/Sound Transit Fiber Optic conduits and associated vaults	
11	Construct remaining wall under I-405 and Grady Way on east side	
12	Extend 108" multi-plate culvert on east side	
13	Construct new cantilevered signal	
14	Build a new 3 span deck plate bridge for the third main over Longacres Way near Tukwila Station	
15	Construct new cantilevered signal	
16	Purchase easements or property to construct new grade and supporting access	
17	Add an additional crossover at Glacier Park	
18	Rearrange signal appliances for new track configuration at Glacier Park	
Upgrade Orillia Siding to Third Mainline standards		11.5-15.75
19	Construct up to 7 new industry turnouts	
20	Relay over 4.25 track miles of rail	
21	Renew ties to support increased class of track	
22	Modify signals to support increased class of track	
23	Construct new turnout for BNSF Yard Lead including embankment for new roadbed and access road	
24	Build new 3 span pre-case concrete ballast deck bridge for lead into BNSF Yard near MP 12.3	
25	Purchase easements or property for new lead and access road near MP 12.3	
26	Upgraded 212th Street crossing and upgrade signal crossing controls	
27	Modifications to James Control Point including signal relocations	



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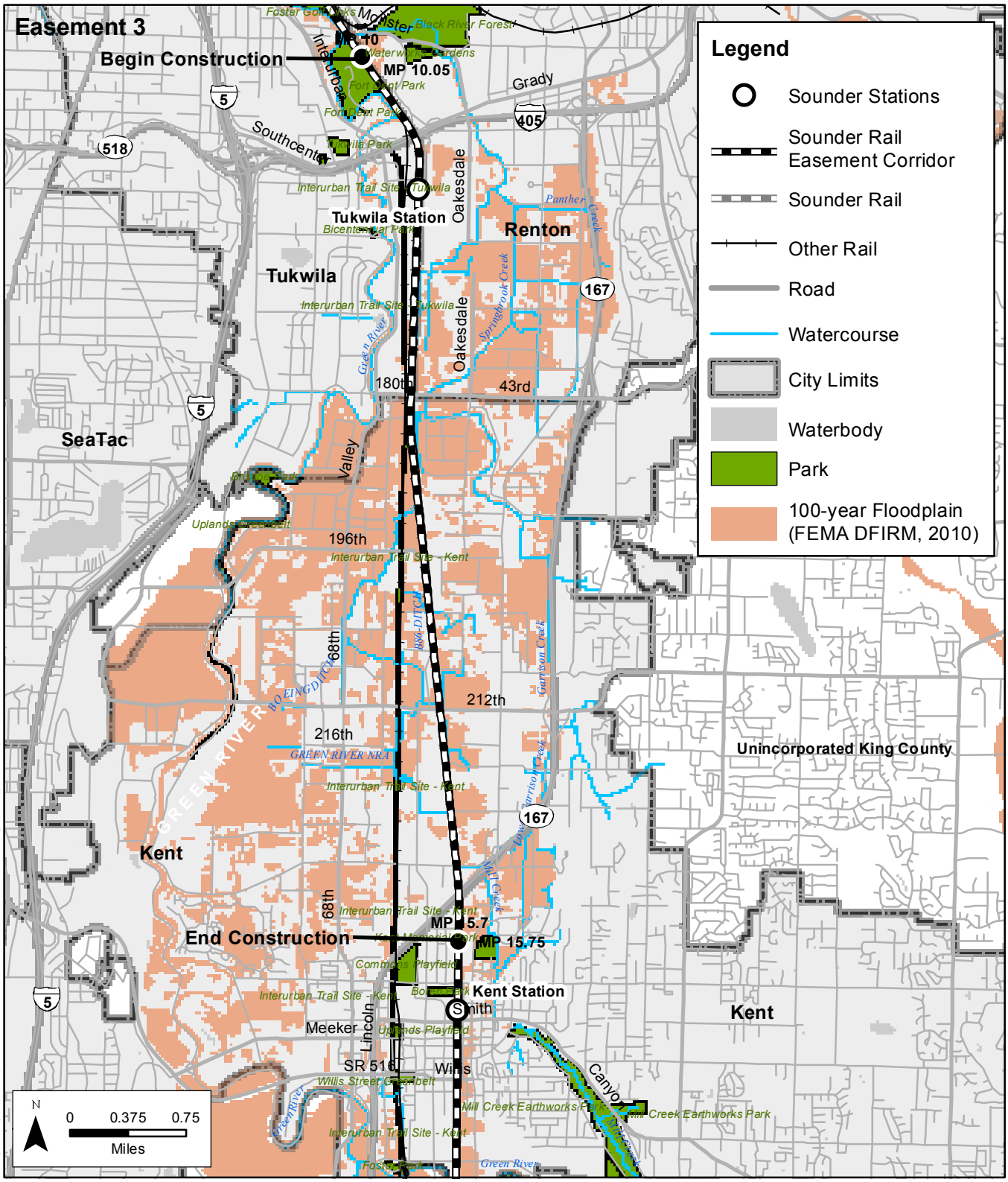
SOURCE: ESA2011; King County, 2005, 2007.

Easement #4 Track Improvements (Figure 2B)
Auburn, Washington

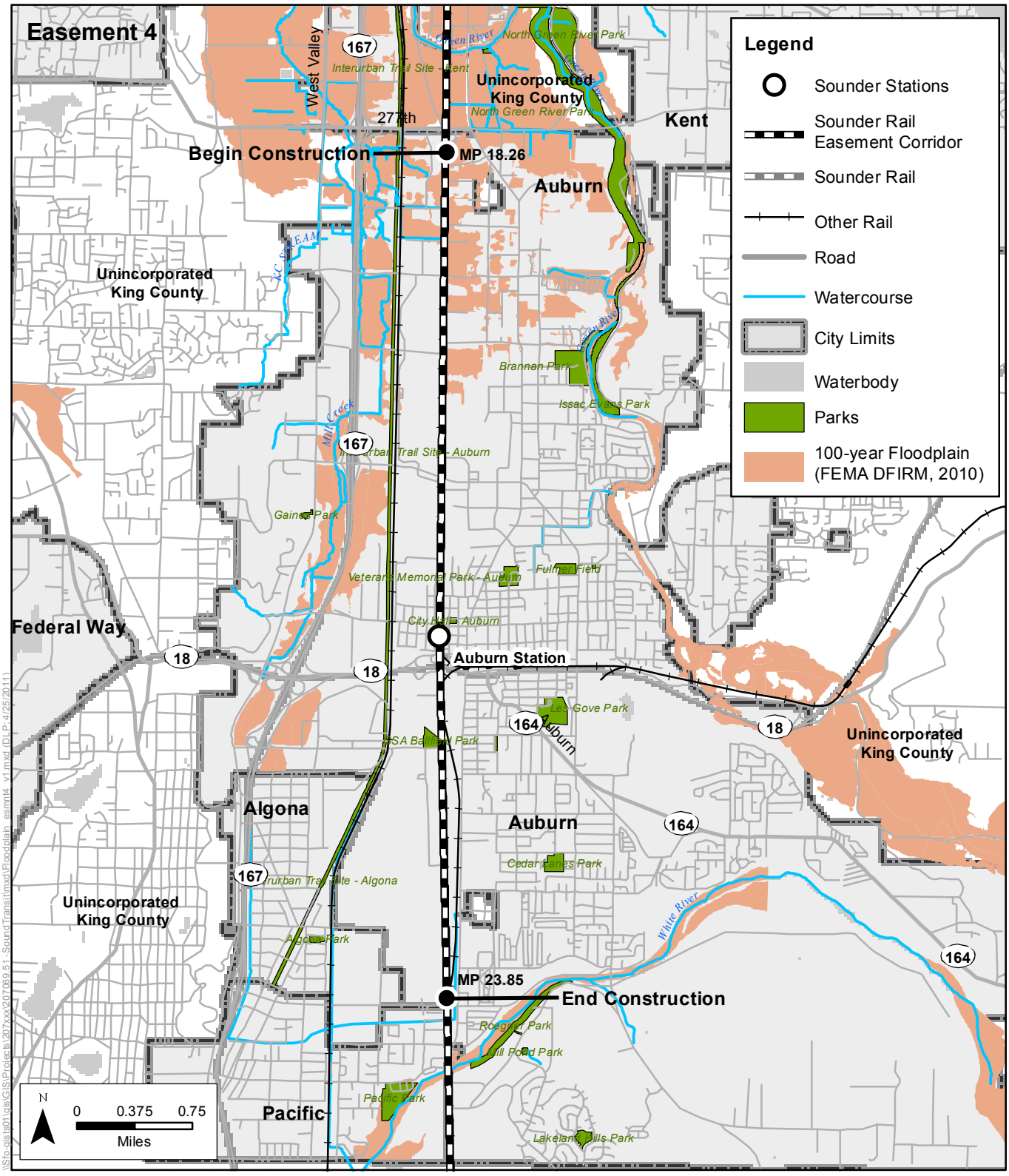
KEY: FIGURE 2B, EASEMENT 4 TRACK IMPROVEMENTS (LOCATION AND DESCRIPTION OF TRACK IMPROVEMENTS)

Track Improvements		
Number	**Description of Improvement**	**Location (Mile Post)**
Thomas Control Point		18.3-18.7
1	Construct embankment grade for new main line one track and turnout pads between MP 18.3 and MP 18.7	
2	Construct new main line one track between MP 18.3 to MP 18.7. (0.4 track miles)	
3	Construct one new crossover and turnout	
4	Construct new cantilever or bridge signal and rearrange signal appliances	
5	Remove portion of main one track	
6	Identify and relocate utilities including fiber optics	
7	Construct embankment grade for new main line track and turnout pads between MP 18.7 and MP 21.2	18.7-21.2
8	Construct 2.5 miles of new main track	
9	Identify and relocate utilities including fiber optics	
10	Add new track through 37th Street NW and 29th Street NW and relocate signal facilities	
11	Construct two crossovers and associated signal facilities at Auburn North	
12	Supporting Signal modifications	
13	Access road serving signals will be required	
14	Construct embankment grade between MP 21.2 and 23.4	21.2-23.4
15	Construct 2.2 miles of new main track	
16	Add new track through 3rd Street NW and Main Street and relocate signal facilities.	
17	Construct a new turnout for Industry and re-align industrial spur and remove existing turnout.	
18	Construct track and grade through the Sound Transit platform and remove the temporary asphalt platform	
19	Identify and relocate utilities including fiber optics	
20	Construct a new turnout and track to serve General Service Administration (GSA) and re-alignment tracks through C Street.	
21	Construct retaining wall adjacent to C Street for GSA spur track	
Construct new third main track		23.4-23.8
22	Construct embankment grade between MP 23.4 and 23.8	
23	Construct 0.4 miles of new main track between MP 23.4 to MP 23.8	
24	Construct one new crossover and turnout	
25	Construct new cantilever/bridge signal and re-arrange signal facilities	
26	Re-align, remove and rebuild existing main tracks	
27	Construct retain wall if necessary on west side near C Street if necessary	
28	Identify and relocate utilities including fiber optics	



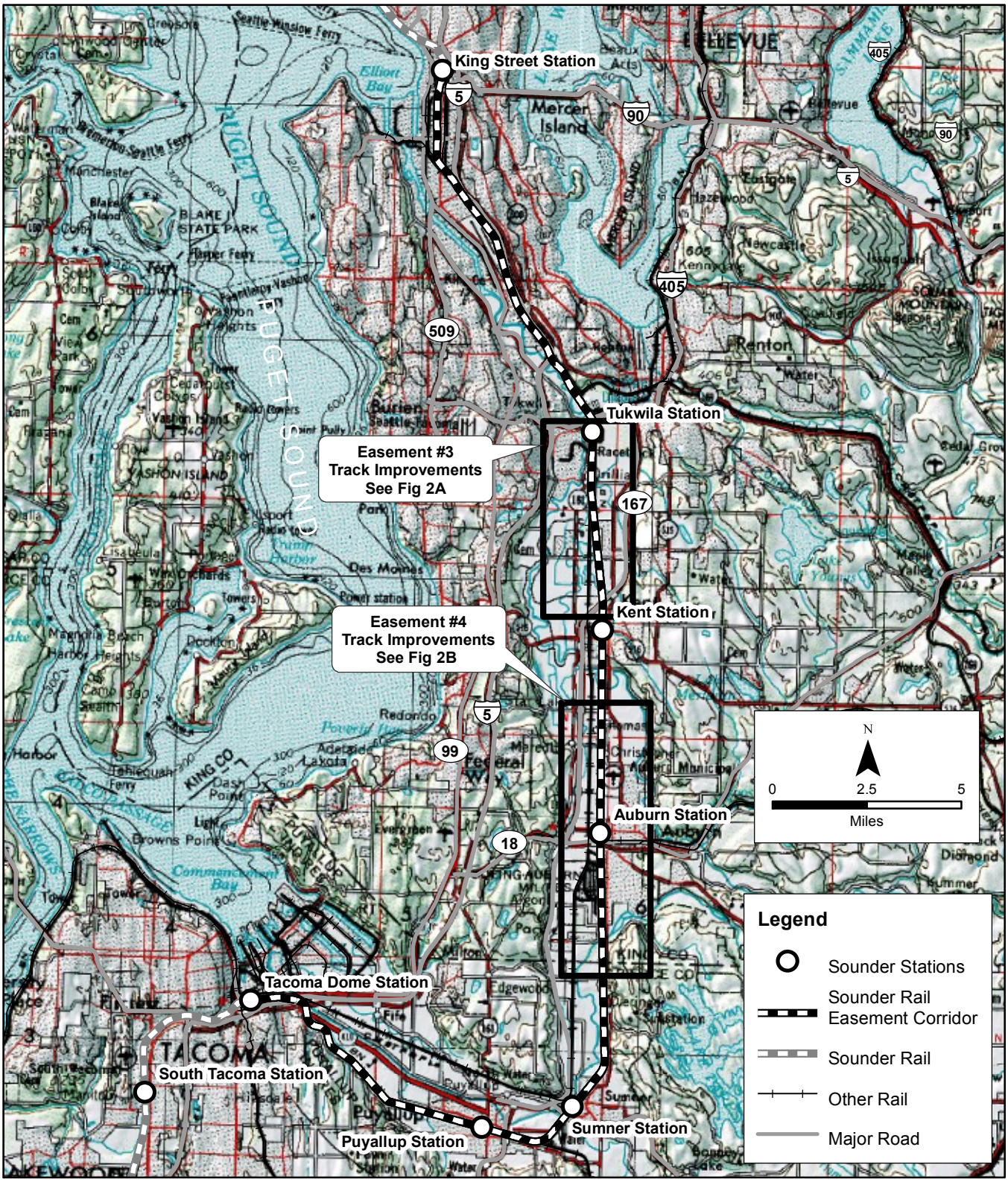
SOURCE: FEMA DFIRM, 2010; King County, 2005, 2007

Figure 3A
FEMA 100-year Floodplain
Tukwila, Renton, and Kent, Washington



SOURCE: FEMA DFIRM, 2010; King County, 2005, 2007

Figure 3B
FEMA 100-year Floodplain
Auburn, Washington



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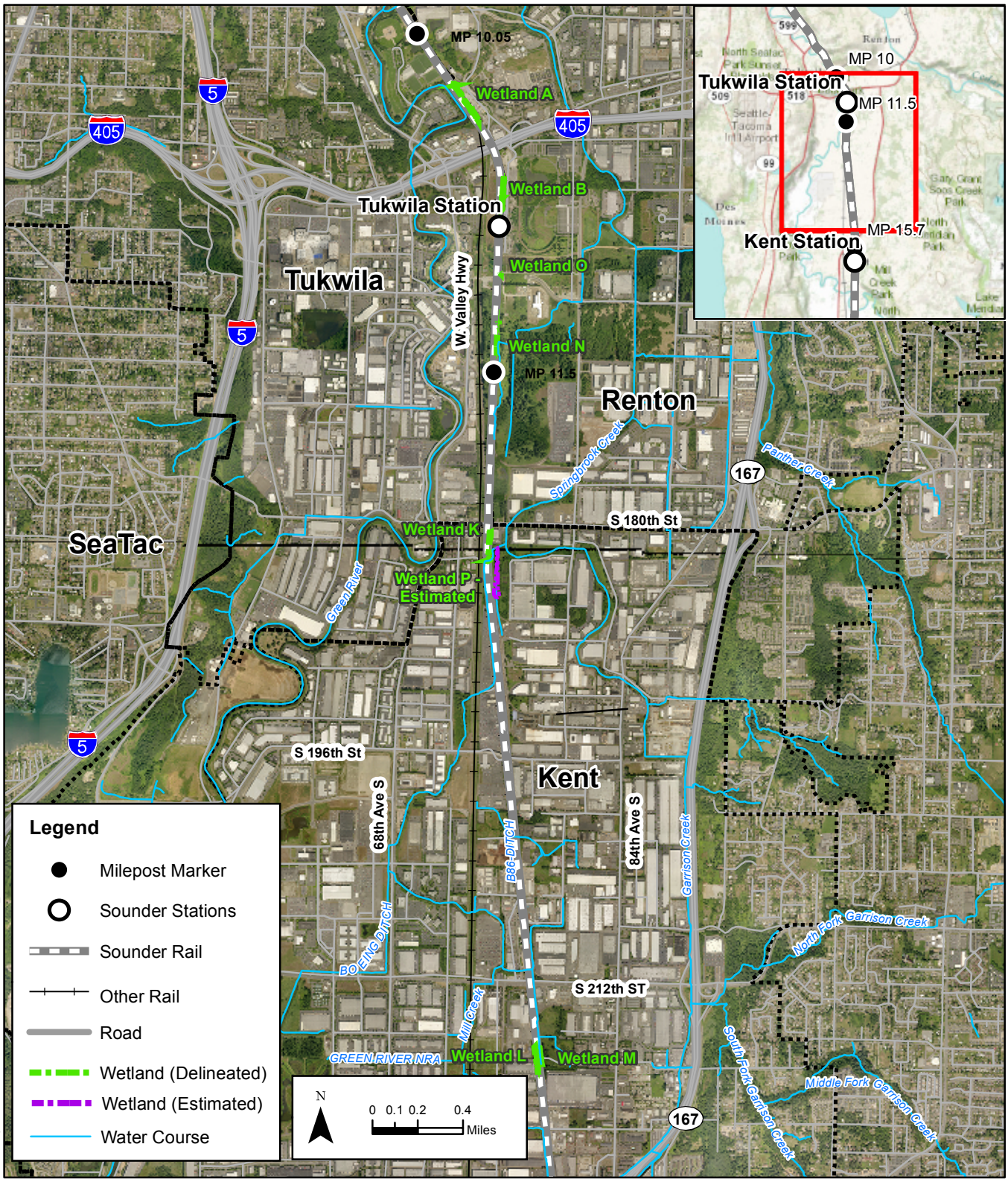
SOURCE: King County, 2002, 2005, 2007; USGS, 2009.

Figure 4
USGS Quad
King and Pierce Counties, Washington



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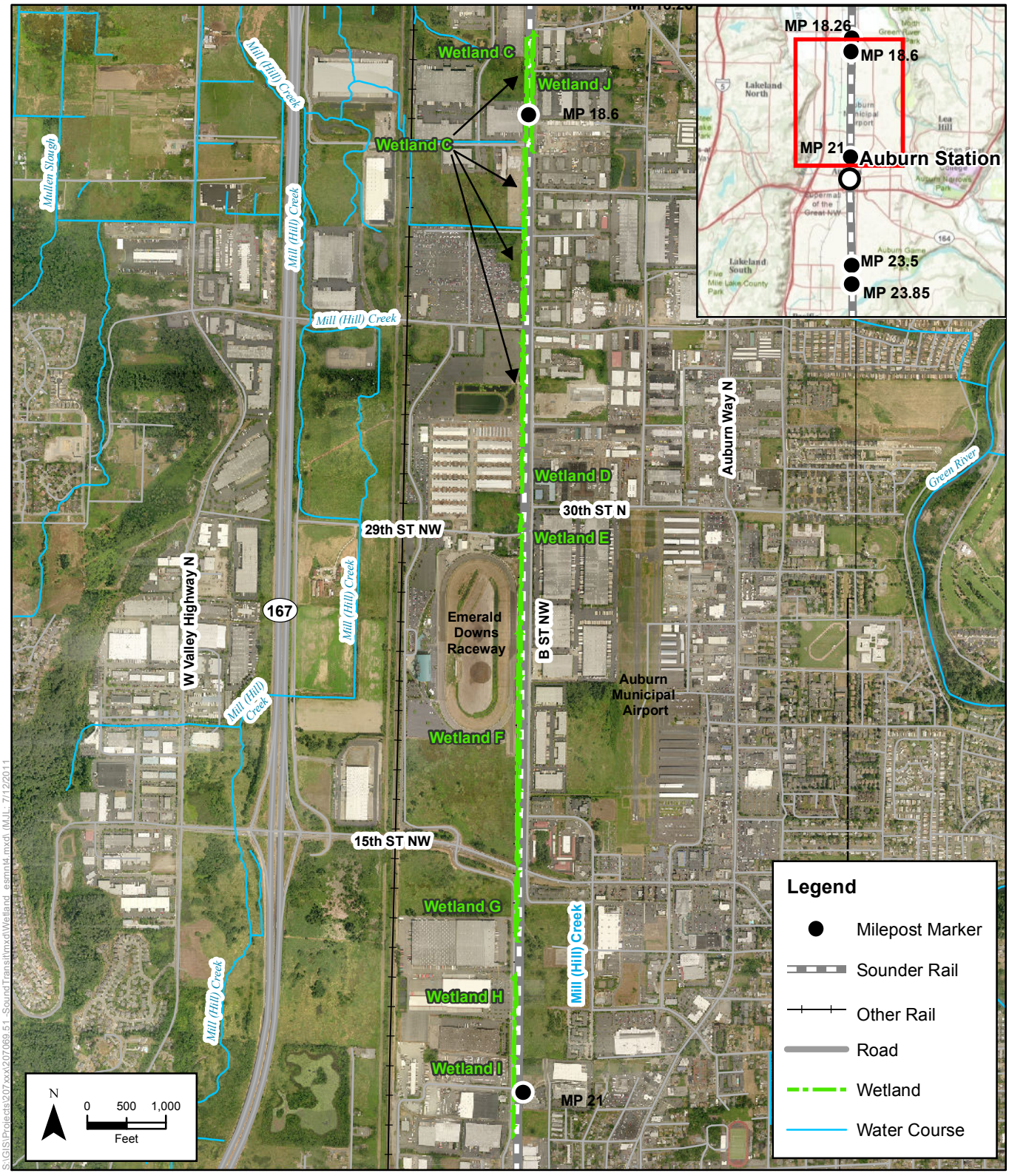
SOURCE: City of Auburn, 2010; ESA, 2011; King County, 2005, 2007.

Figure 5a
Easement #3 Wetland Map
Tukwila, Renton and Kent, Washington



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SOURCE: City of Auburn, 2010; ESA, 2011; King County, 2005, 2007.

Figure 5b
Easement #4 Wetland Map
Auburn, Washington

ATTACHMENT A

DETAILS OF WETLANDS

EASEMENT 3 & 4

Sixteen wetlands (Wetlands A through P) were identified and delineated within the project area (Figures 5a and 5b). The majority of wetlands function as drainage ditches along the BNSF tracks. Five wetlands (Wetlands A, C, E, F, and P) are connected to larger, non-linear wetlands that extend beyond the project area (ESA Adolfson, 2010). A brief description of each wetland by Easement area is included below.

Easement 3 Area

Wetland A is a highly disturbed, palustrine emergent (PEM), depressional outflow wetland located north of Interstate 405 (I-405) and east of the BNSF railroad embankment and immediately west of an industrial gravel-washing facility. Wetland A appears to have been excavated as a ditch to convey surface water runoff. A small portion of wetland A continues off-site to the northeast.

Wetland B is a highly disturbed palustrine emergent/palustrine scrub shrub (PEM/PSS), depressional flow-through wetland located along the east edge of the BNSF railroad embankment. The wetland is an excavated ditch situated between the railroad embankment to the west and a paved parking area to the east. The wetland is approximately 0.10 acres (4,356 square feet) in size.

Wetland K is a PEM/PSS riverine flow-through wetland located south of SW 43rd St and east of the BNSF railroad embankment in Kent, Washington. Wetland K is located on a low terrace adjacent to Springbrook Creek and receives flood flows from the Creek. Surface runoff from the BNSF railroad embankment and surrounding uplands to the west also contributes water to the wetland, although these sources are secondary to flood flows the wetland receives.

Wetland L is a PEM/PSS depressional flow-through wetland located south of S 212th Street and west of the BNSF railroad embankment in Kent, Washington. Wetland L functions as a drainage ditch and receives surface flows from the BNSF railroad embankment to the east and commercial developments and parking lots to the west.

Wetland N is a palustrine forested (PFO), PSS, and PEM depressional flow through wetland located south of the Tukwila Commuter Rail Station, west of the federal building, and east of the BNSF railroad embankment in Renton, Washington. Wetland N is in a large depression. Primary sources of hydrology include a high groundwater table, precipitation, and flows from a stream mapped in the western portion of the wetland.

Wetland O is a PSS depressional closed wetland located south of the Tukwila Commuter Rail Station near the proposed Strander Boulevard Extension and east of the BNSF railroad embankment in Renton, Washington. Wetland O functions as a small depression which receives surface flows from the BNSF railroad embankment to the west and gravel roadways associated with the Boeing lot to the east.

Wetland P is a PEM and PSS riverine flow-through wetland located to the south of Wetland K and to the east of the BNSF railroad embankment in Kent, Washington. It is located outside the project boundary, with part of its buffer extending into the project area. Wetland P is associated with a drainage ditch that flows into Mill Creek. It is linear in form, and extends out from the above-mentioned ditch to a distance that varies from approximately 10 feet and 50 feet. The wetland receives water primarily from flooding associated with the ditch and Mill Creek. The wetland also receives surface flows from the BNSF railroad embankment to the west and commercial developments to the east.

Easement 4 Area

Wetland C is an excavated, PEM depressional flow-through wetland. For much of its length, Wetland C is connected to a larger palustrine scrub-shrub (PSS) wetland that extends off-site to the west. The portion of Wetland C that is within the railroad ROW is bordered by the BNSF railroad embankment to the east and a variety of developments to the west, that include fill for building pads and a parking lot. Wetland C continues beyond 37th Avenue NW where it is hydrologically connected to an excavated, PEM depressional flow through wetland ditch via a culvert located beneath 37th Avenue NW.

Wetland D is a PEM, depressional flow-through wetland located along the west side of the BNSF railroad embankment in Auburn, Washington.

Wetland E is a PSS/PEM depressional flow-through wetland located along the west side of the BNSF railroad embankment in Auburn, Washington. Wetland E is an open flow through system. The portion of Wetland E that is located within the BNSF ROW constitutes the eastern edge of a PSS wetland that extends off-site to the west approximately 40 to 80 feet beyond the BNSF ROW.

Wetland F is a steep-sided PEM depressional flow-through wetland located in part along the west edge of the BNSF railroad embankment in Auburn, Washington, and extends off-site to the west.

Wetland G is a PEM depressional flow-through wetland located south of the 15th Avenue NW overpass along the west side of the BNSF railroad embankment in Auburn, Washington.

Wetland H is a PEM depressional flow-through wetland located between C Street and the BNSF railroad embankment in Auburn, Washington.

Wetland I is a PEM depressional flow-through wetland located between C Street NW and the BNSF railroad embankment in Auburn, Washington.

Wetland J is a PEM depressional flow-through wetland located to the east of the BNSF railroad tracks, between S 277th Street and 44th Street NW in Auburn, Washington. B Street NW borders the wetland to the east.

Wetland M is a PEM depressional flow-through wetland located south of S 212th Street and east of the BNSF railroad embankment in Kent, Washington. Wetland M functions as a drainage ditch and receives surface flows from the BNSF railroad embankment to the west and surrounding uplands to the east.

Due to the need for an expanded rail prism and associated embankment, the project will require fill to be placed within some of the wetlands previously identified. No fill is anticipated in wetlands L, M, N, O or P. The table below is a summary of wetland impacts associated with the proposed action by easement area.

Easement Area No.	Wetland	Wetland Size (acres)	Wetland Fill Area (acres)
3	A	0.29 (0.33 total)*	0.06
3	B	0.10	0.08
4	C	2.7 (30.7 total)*	2.30
4	D	0.17	0.12
4	E	0.08 (6.4 total)*	0.05
4	F	2.61 (43 total)*	2.30
4	G	0.49	0.22
4	H	0.18	0.08
4	I	0.21	0.10
4	J	0.45 (2.2 total)*	0.17
3	K	0.46 (0.76 total)*	0.38
3	L	0.29	-
3	M	0.09 (0.29 total)*	-
3	N	0.43 (46 total)*	-
3	O	0.005	-
3	P	(1.2 off-site)*	-
Total			**5.86**

*Estimate of total acreage of delineated wetlands and off-site wetlands (beyond BNSF ROW)

Easement 3 subtotal = 0.52 acres Easement 4 subtotal = 5.34 acres